

# Claims

- [c1] 1. An optical device, comprising:  
a plurality of rods, wherein the rods are arranged by a photonic crystal structure;  
a plurality of light input ports;  
a plurality of light output ports;  
a light path; and  
a defect of rod located in the light path.
- [c2] 2. The optical device of Claim 1, wherein a plurality of lights outputted from the light output ports have the same intensities.
- [c3] 3. An optical device, comprising:  
a plurality of holes, wherein the holes are arranged by a photonic crystal structure;  
a plurality of light input ports;  
a plurality of light output ports;  
a light path; and  
a defect of hole located in the light path.
- [c4] 4. The optical device of Claim 1, wherein a plurality of lights outputted from the light output ports have the same intensities.

- [c5] 5. An optical device, comprising:  
a plurality of rods, wherein the rods are arranged by a photonic crystal structure;  
a plurality of light input ports;  
a plurality of light output ports;  
a light path; and  
a defect of rod located in the light path;  
wherein a plurality of lights outputted from the light output ports have the same intensities.
- [c6] 6. An optical device, comprising:  
a plurality of holes, wherein the holes are arranged by a photonic crystal structure;  
a plurality of light input ports;  
a plurality of light output ports;  
a light path; and  
a defect of hole located in the light path;  
wherein a plurality of lights outputted from the light output ports have the same intensities.